REMARKS

In accordance with the foregoing, various of the independent, rejected claims have been amended to specify that the driving method and apparatus in accordance with the present invention relate to a plasma display.

Furthermore, new independent claims 48-52 have been added.

No new matter is presented.

Accordingly, approval and entry of the foregoing amended and new claims are respectfully requested.

STATUS OF CLAIMS

Claims 1-47 are heretofore pending in the present application and new claims 48-52 have been added.

Claims 7, 11, 20 and 24 are allowed.

Claims 3, 16 and 29 are objected to.

All remaining claims are rejected.

REJECTIONS OF CLAIMS

Item 3

Item 3 rejects various of the claims under 35 USC § 103(a) for obviousness in view of Morrison USP 3,905,482, newly cited in the present Action.

Items 4-9

Items 4-9 reject respective, different groups of claims, likewise for obviousness under 35 USC § 103(a), over the principle reference to Morrison as applied in item 3 and, further, in light of Applicants' Admitted Prior Art and/or secondary prior art references.

The rejections are respectfully traversed.

Morrison (U.S. Patent No. 3,906,482) discloses a binary-signal display, employing a plurality of light-emitting elements arranged in a matrix, where a display sweep circuit

includes circuit means responsive to sequentially occurring pulses for generating in parallel a plurality of time-varying, binary-valued control signals that together define a column addressing signal that one-by-one identifies each column.

By contrast, in the present invention, and with particular regard to independent claims 1, 6, 10, 14, 19, 23, 27, and 34 to 39 of the group of claims rejected in item 3 of the Action, the claimed display apparatus is not a binary-signal display as described in Morrison, but is a plasma display apparatus. It is respectfully submitted that a binary-signal display arranged in a matrix is basically different from a plasma display apparatus, as disclosed and claimed in the present application.

Specifically, in the invention (for example, as defined in claim 1), a frequency of a clock signal used to drive the display panel is continuously varied, and the plasma display panel is driven with the frequency varying clock signal. According to the invention, the intensity of noise thereby can be reduced over the entire frequency range concerned, while avoiding degradation of various characteristics.

The above special characteristics of the invention are not taught or suggested in Morrison. In addition, the effect (or purpose) of Morrison is basically different from that of the present invention.

As is well known in the art, plasma display panels require relatively high voltage and high-frequency AC drive signals. See the paragraph spanning pages 8-9 of the specification in which typical fixed clock frequencies are listed as 24 MHz, 40 MHz, 60 MHz, etc....."

The specification at page 14, lines 24-35 refers to clock signals having a frequency varying with time within a range of plus or minus a few percentage of a reference frequency "fo" which, for example, may be 40 MHz and having noise levels occurring in frequency ranges of 30 to 100 MHz (Fig. 11) and of 100 MHz to 200 MHz (Fig. 12). Moreover, a comparison of Figs. 5 and 6, showing measurements of noise in the prior art plasma display apparatus as in Fig. 1, with the much reduced noise levels shown in Figs. 11 and 12, achieved by the first embodiment of the invention, is clear evidence of the beneficial effects of the driving method and display apparatus in accordance with the invention--and see subsequent figures for the improvements achieved by second through fourth embodiments of the invention.

The Morrison reference does not specify any frequency values but shows, in Fig. 5, drive signals comprising pulsed DC waveforms which operate the Morrison display panel--altogether difference from the AC waveforms used to operate the display apparatus of the disclosed embodiments of the present invention. Further, col. 2, lines 8-13 explain that the Morrison

apparatus employs digital display sweep circuitry, whereby there is no need to generate high voltage linear ramps as are required for a conventional oscilloscope display.

Item 3 of the Action contrasts the present invention to the disclosure of Morrison and offers the following observation in support of the obviousness contentions underlying the rejections of the above-specified pending claims over Morrison:

> The difference between the teachings of the instant invention and that of the Morrison reference is that the instant invention is directed to the reduction of peak values of the display noise by varying the display panel driving frequency wherein (sic., --whereas the--) Morrison reference facilitate generating a time-varying binary-valued electrical input signal used to selectively illuminate light-emitting elements that are arranged in a matrix.
>
> It would have been obvious to a person of ordinary skill in the art at the time of the invention that the limitations as set forth in claims 1, 10, 14, 19, 2, 27 and 34-39 are addressed in the teachings of Morrison.

(Action at pages 2-3)

As noted at the outset, the independent claims rejected in item 3, namely claims 1, 10, 14, 19, 23, 27 and 34-39, have been amended to recite the therein-claimed method and apparatus, variously, as relating to a plasma display. The respective dependent claims 4, 8, 12, 17, 21, 25, and 30 which specified the display apparatus to be a plasma display apparatus have been canceled.

Applicants have shown, in the foregoing, that a plasma display has radically different characteristics and requirements than a display apparatus of the type disclosed by Morrison and respectfully submit that the finding of obviousness of the present claimed invention over the teachings of Morrison is without basis.

In each of the successive items 4 to 9 of the Action, the rejections are based on respective combinations of the admitted prior art of applicants' disclosure, as to prior art plasma display apparatus, and Morrison, taken singly or in combination with yet other secondary prior art references, the Action further asserting, in each of those items:

> It would have been obvious to a person of ordinary skill in the art at the time of the invention to provide to the device as taught by Morrison, the feature as taught by Admitted Prior Art in order to expand the driving method as taught by Morrison to a plasma

display apparatus.

(See, e.g., Action at page 3, item 4, the last three lines as to item 3)

Applicants respectfully submit that the Examiner's contention of "providing to the device as taught by Morrison, the feature as taught by Admitted Prior Art in order to expand the driving method as taught by Morrison to a plasma display apparatus" is not understandable. To the extent the Examiner intends merely to contend that the Admitted Prior Art disclosed in the present application suffices to render obvious the application of that plasma display technology to Morrison, the contention is self evidently deficient. The Examiner, in essence, proposes to convert the Morrison structure to a plasma display apparatus, altogether altering the structural character and operating conditions of the Morrison display--without either the admitted prior art or the Morrison disclosure suggesting that any such alteration should be made. Moreover, Morrison has no teaching of any high frequency noise problem to be overcome.

Prima facie obviousness clearly is not shown by this unsubstantiated contention.

The proposed combinations of the Admitted Prior Art and Morrison, along with one or more other secondary prior art references, are advanced in the present Action in reliance on alleged "basic knowledge" or "common sense"--which the Federal Circuit has rejected as affording "no evidentiary support", In re Zurko, 258 F3d 1379, 59 USPQ2d 1693 (Fed. Cir. 2001), and which has been rigorously endorsed by the PTO in accordance with the Memorandum of Stephen G. Kunin of February 21, 2002: "Procedures For Relying On Facts Which Are Not Of Record As Common Knowledge Or For Taking Official Action." (Hereinafter, "Kunin Memorandum") The "lack of substantial evidence" (see Kunin Memorandum, page 1) is evident in the above statements at page 2-5 of the Action, listed above.

NEW CLAIMS 48-52

The new independent claims 48-52 are based on combinations of claims 1+7, 14+16, 27+29, 36+16, and 37+29. The second claim of each combination is an allowable dependent claim, as set forth, variously, in items 10 and 12 of the Action, each thereof generally specifying that the frequency of a clock signal is continuously varied: "within a range of +/- 1% of a reference frequency...."

Accordingly, these claims 48-52, variously rectifying a "driving method for a display apparatus..." or a "display apparatus including a display panel to display an image..."

are submitted to be allowable over the art of record and such action is earnestly solicited.

CONCLUSION

In accordance with the foregoing, it is respectfully submitted that the pending claims patentably distinguish over the references of record and, there being no other objections or rejections, that the application is in condition for allowance, which action is earnestly solicited.

If there are any additional fees associated with filing of this Amendment, please charge the same to our Deposit Account No. 19-3935.

Respectfully submitted,

STAAS & HALSEY LLP

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By: _____
H. J. Staas
Registration No. 22,010

1201 New York Avenue, NW, Suite 700
Washington, D.C. 20005
Telephone: (202) 434-1500
Facsimile: (202) 434-1501